Cancer-fighting treatment gets boost from Isotope Production Facility

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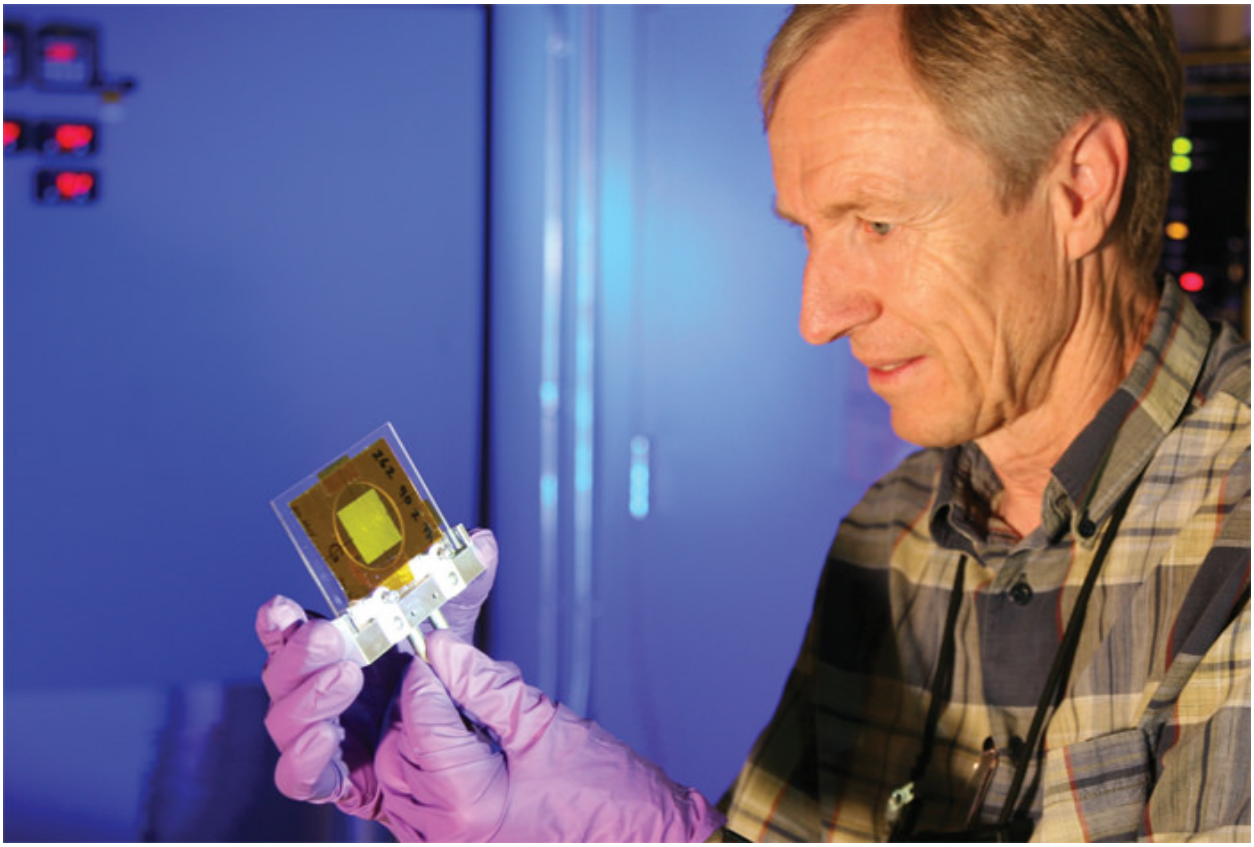

Isotope Production Facility produces cancer-fighting actinium

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Isotope cancer treatment research at LANL

A new medical isotope project at LANL shows promise for rapidly producing major quantities of a new cancer-treatment agent, actinium 225 (Ac-225).

Using proton beams, the Lab and its partner Brookhaven National Laboratory could match current annual worldwide production of the isotope in just a few days, solving critical shortages of this therapeutic isotope that attacks cancer cells.

A collaboration between LANL, Brookhaven, and Oak Ridge national laboratories is developing a plan for full-scale production and stable supply of Ac-225.

Alpha particles are energetic enough to destroy cancer cells

Ac-225 emits alpha radiation. Alpha particles are energetic enough to destroy cancer cells but are unlikely to move beyond a tightly controlled target region and destroy healthy cells.

Alpha particles are stopped in their tracks by a layer of skin—or even an inch or two of air.

Economically viable supply of Ac-225 is lacking

One of the primary barriers to wider use of Ac-225 has been the lack of an economically viable supply.

Scientists at the Lab's Isotope Production Facility (IPF) recently completed a successful research and development project in which they explored the accelerator-based production of the isotope.

Producing medical imaging isotopes is a primary mission

Since 2005, a primary mission for IPF has been production of medical imaging isotopes such as strontium-82 for positron emission tomography, known as PET scans. In addition to medical imaging applications, IPF has had the mission of making isotopes available for

- national security,
- environmental studies and
- a variety of industrial and R&D applications.

The Ac-225 work is a first and important step toward the addition of a range of IPF-produced isotopes for medical therapy applications.